

Remarks

Claims 9-12 and 25 are pending. Claims 10-12 have been allowed.

REJECTIONS UNDER 35 USC § 103(a)

The Examiner rejects Claims 9 and 25 on the ground of being unpatentable over U.S. Patent No. 6,040,747 (Krasser et al.) in view of U.S. Patent No. 6,307,460 (Yu) and U.S. Patent No. 3,456,225 (Ellenberger).

Krasser et al. discloses an overcurrent circuit breaker (Figures 4, 6-8) including a housing 1, fixed contacts 14,15 having respective contact points 16,17, a contact bridge 13 carried by a contact bridge support 20, contact connections 7 (current input) and 8 (current output), and a bimetal 38. The contact bridge support 20 is injection-molded as one-piece from insulating material. See Krasser et al., col. 4, ll. 11-12. The bimetal 38 is bent into a U-shape and points upward (Figures 7 and 8) with a connecting web 56 between two U-shaped legs 57,58. As shown in Figures 4, 6 and 7, the one U-shaped leg 57 is connected to the base element 22 or the pedestal part 76 of the fixed contact 15, which is also assigned to the current output. The other U-shaped leg 58 is welded with its end to the contact connection 8, which is assigned to the current output. Under the effects of an overcurrent, the U-shaped arc or the U-shaped connecting web 56 of the bimetal 38 bends outward (in clockwise direction relative to the places where U-shaped legs 57,58 are clamped in Figure 8, which is away from the contact bridge support 20), in order to release an interlocking cam 37 (Figure 5) of the contact bridge support 20 from the detent opening 55 of the bimetal 38. An adjustment screw 63 acts upon the base element 22 of the fixed contact 15 in the current leakage range and, thus, causes the adjustment movement of the bimetal 38.

Yu discloses a power switch device including a switch box 20 housing an inverted U-shaped bimetal plate 40 having one end with two legs and another pushing end 41. First and second terminal plates 25,26 extend from the switch box 20. One of the bimetal legs is connected to the first terminal plate 25. The other bimetal leg is connected to a first end of a conduct plate 60. A first conduct point 261 is connected to the second terminal plate 26. A second conduct point 62 is connected to a second end of the conduct plate 60. When the electric circuit is overloaded, the pushing end 41 of the bimetal plate 40 is thermally deformed to push hook 582 of engaging member 58 away from the rounded top of block 22.

Ellenberger discloses a pushbutton actuated overload circuit breaker including two terminals strips 4,5 having fixed contacts 7,12, respectively, as shown in Figures 1 and 3 of the reference. Those fixed contacts 7,12 are operatively associated with two contacts 13 on a contact bridge 14 as shown in Figure 4 of the reference. The contact bridge 14 is

mounted in a insulated contact bridge carrier, which consists of two parallel plates 15 and 16 of insulating material. The insulating parallel plates 15,16 are connected to each other by a hollow rivet 17. The insulated contact bridge carrier 15,16 is slidable in an axial direction on a control rod 21 and is pivotable relative thereto. The control rod 21 is rigidly connected to a pushbutton 20. As shown in Figure 1 of the reference, the insulated contact bridge carrier 15,16 is held in an arrested position by a heat-resistant insulated holding detent 33, which is affixed to an end of a bimetal strip 10.

The Examiner states that Ellenberger discloses a push-button actuator having "a contact arm [16] carried by and electrically connected to an operating mechanism [figure 2]." This statement is traversed as applied to the refined recital of Applicants' claims. Furthermore, it is respectfully submitted that Ellenberger clearly teaches away from that statement.

As clearly disclosed at column 4, lines 25-30 of Ellenberger (emphasis added), the contacts 13 are on a contact bridge 14, which is a stamped flat part mounted in an insulated contact bridge carrier. The insulated contact bridge carrier "consists of two parallel plates 15 and 16 of insulating material" which are spaced from each other and connected to each other by a hollow rivet 17. Clearly, Ellenberger discloses a push-button actuator having an insulated contact bridge carrier 15,16 carrying a contact bridge 14 with contacts 13. Furthermore, column 2, lines 19-27 of Ellenberger makes clear that the contact bridge (14) is mounted within the insulating contact-bridge carrier (15 and 16), and that such insulating contact-bridge carrier is connected to the control rod (21). In turn, the control rod 21 is rigidly connected to the user pushbutton 20. In summary, the contact bridge 14 and the contacts 13 of Ellenberger are electrically insulated from the operating mechanism [figure 2] (e.g., the control rod 21 and pushbutton 20) by the insulated contact bridge carrier 15,16.

Claim 9 recites, *inter alia*, a circuit breaker comprising: a housing; a pair of separable contacts mounted in the housing; an operating mechanism for opening and closing the separable contacts; a first terminal electrically interconnected with a first one of the separable contacts; a second terminal electrically connected to a second one of the separable contacts; an electrically conductive support mechanism mounted in the housing; and a bimetal overcurrent assembly responsive to selected conditions of current flowing through the separable contacts for actuating the operating mechanism to trip open the separable contacts, the bimetal overcurrent assembly having first and second legs and a free intermediate section which deflects in response to the selected conditions of current to actuate the operating mechanism, with the first leg engaging and being electrically connected to the

support mechanism, with the second leg electrically connected to the first terminal, with the operating mechanism carrying and being electrically connected to the first one of the separable contacts, and with the support mechanism supporting and being electrically connected to the operating mechanism.

It is submitted that Krasser et al., which discloses an insulated injection-molded contact bridge support 20 (which is applied by the Examiner as being an operating mechanism) and a contact bridge 13 (which is applied by the Examiner as being part of separable contacts), teaches away from the refined recital of an operating mechanism carrying and being electrically connected to a first one of separable contacts. Furthermore, it is submitted that Krasser et al., which discloses a bimetal 38 being bent into a U-shape with a connecting web 56 between two U-shaped legs 57,58 (which bimetal 38 having such web 56 is applied by the Examiner as being both a support mechanism and a bimetal), teaches away from the refined recital of a support mechanism supporting and being electrically connected to such *operating* mechanism. At best, the detent opening 55 of the bimetal 38 of Krasser et al. (Figures 1, 8 and 9) engages the insulated interlocking cam 37 of the insulated injection-molded contact bridge support 20.

As set forth in column 6, lines 11-28 of Krasser et al., the bimetal 38 is bent into a U-shape with a connecting web 56 between two U-shaped legs 57,58. Under the effects of an overcurrent, the "U-shaped arc or the U-shaped connecting web 56 of the bimetal 38" bends outward in order to release an interlocking cam 37 of the contact bridge support 20 from the detent opening 55 of the bimetal 38. Hence, it is submitted that the reasonable position is that Krasser et al. teaches and suggests a bimetal 38 having a connecting web 56 between two U-shaped legs 57,58. It is submitted that Krasser et al. does not teach or suggest an electrically conductive support mechanism mounted in a housing, with a first leg of a bimetal engaging and being electrically connected to such support mechanism, with an operating mechanism carrying and being electrically connected to a first one of separable contacts, and with such support mechanism supporting and being electrically connected to such operating mechanism.

It is not clear which pair of contacts of Krasser et al. the Examiner construes to be "separable" within the context of Claim 9. The movable contact bridge 13 is separable from the contact points 16,17 of the respective fixed contacts 14,15 of Krasser et al.. Hence, if the Examiner selects either: (1) contact bridge 13 and contact point 16; or (2) contact bridge 13 and contact point 17 as being the recited separable contacts of Claim 9, then, in either case, Krasser et al. does not teach or suggest a first terminal electrically interconnected

with a first one of *separable* contacts and a second terminal electrically connected to a second one of such *separable* contacts.

The Examiner states that Yu (Figure 1) discloses a bimetal assembly having a pair of legs wherein one of which is connected to a terminal and the other of which “is connected to a contact support”.

It is submitted that Yu, which discloses one bimetal leg connected to a terminal plate 25 and another bimetal leg connected to a first end of a conduct plate 60 functioning as an operating mechanism, adds nothing to Krasser et al. regarding any electrically conductive support mechanism mounted in a housing, with a first leg of a bimetal engaging and being electrically connected to such support mechanism, with an operating mechanism carrying and being electrically connected to a first one of separable contacts, and with such support mechanism supporting and being electrically connected to such *operating* mechanism.

The Examiner’s statement that Ellenberger discloses a push-button actuator having a contact arm 16 carried by and electrically connected to an operating mechanism (Figure 2) has been traversed, above.

The Examiner has not specified what structure of Ellenberger is an operating mechanism. To the extent that the Examiner argues that the movable contact bridge 14 of Ellenberger is an operating mechanism, then that movable contact bridge 14 carries and is electrically connected to the movable contacts 13. However, it is respectfully submitted that the Examiner must then concede that Ellenberger, which mounts the contact bridge 14 within the insulating contact-bridge carrier 15,16, and which connects such insulating contact-bridge carrier to control rod 21, does not teach or suggest any support mechanism supporting *and being electrically connected to* such contact bridge 14. Alternatively, to the extent that the Examiner argues that some other structure (e.g., the insulating contact-bridge carrier 15,16 like the insulated contact bridge support 20 of Krasser et al.) of Ellenberger is an operating mechanism, then that other structure and that reference does not teach or suggest and adds nothing to the other references regarding an operating mechanism carrying *and being electrically connected to* a separable contact, and a support mechanism supporting and being electrically connected to such *operating* mechanism. Again, as was respectfully discussed above, the Examiner’s position that the insulating contact-bridge carrier 15,16 is electrically connected to an operating mechanism cannot be supported by the express disclosure of the reference to the contrary.

Accordingly, for the above reasons, it is submitted that Claim 9 patentably distinguishes over the references.

Claim 25 is an independent claim, which recites, *inter alia*, a circuit breaker comprising: a housing; a pair of separable contacts mounted in the housing; an operating mechanism for opening and closing the separable contacts; a first terminal electrically interconnected with a movable one of the separable contacts; a second terminal electrically connected to a fixed one of the separable contacts; an electrically conductive support mechanism mounted in the housing and supporting the operating mechanism; and a bimetal overcurrent assembly responsive to selected conditions of current flowing through the separable contacts for actuating the operating mechanism to trip open the separable contacts, the bimetal overcurrent assembly having first and second legs and a free intermediate section which deflects in response to the selected conditions of current to actuate the operating mechanism, with the first leg engaging and being electrically connected to the support mechanism, with the second leg electrically connected to the first terminal, with the operating mechanism carrying and being electrically connected to the movable one of said separable contacts, and with the support mechanism being electrically connected to the operating mechanism.

It is submitted that Krasser et al., which discloses an insulated injection-molded contact bridge support 20 (which is applied by the Examiner as being an operating mechanism) and a contact bridge 13 (which is applied by the Examiner as being part of separable contacts), teaches away from the refined recital of an operating mechanism carrying and being electrically connected to a movable one of separable contacts. Furthermore, it is submitted that Krasser et al., which discloses a bimetal 38 being bent into a U-shape with a connecting web 56 between two U-shaped legs 57,58 (which bimetal 38 having such web 56 is applied by the Examiner as being both a support mechanism and a bimetal), teaches away from the refined recital of a support mechanism supporting and being electrically connected to such *operating* mechanism. At best, the detent opening 55 of the bimetal 38 of Krasser et al. (Figures 1, 8 and 9) engages the insulated interlocking cam 37 of the insulated injection-molded contact bridge support 20.

As set forth in column 6, lines 11-28 of Krasser et al., the bimetal 38 is bent into a U-shape with a connecting web 56 between two U-shaped legs 57,58. Under the effects of an overcurrent, the "U-shaped arc or the U-shaped connecting web 56 of the bimetal 38" bends outward in order to release an interlocking cam 37 of the contact bridge support 20 from the detent opening 55 of the bimetal 38. Hence, it is submitted that the

reasonable position is that Krasser et al. teaches and suggests a bimetal 38 having a connecting web 56 between two U-shaped legs 57,58. It is submitted that Krasser et al. does not teach or suggest an electrically conductive support mechanism mounted in a housing and supporting an operating mechanism, with a first leg of a bimetal engaging and being electrically connected to such support mechanism, with such operating mechanism carrying and being electrically connected to a movable one of separable contacts, and with such support mechanism being electrically connected to such operating mechanism.

It is not clear which pair of contacts of Krasser et al. the Examiner construes to be "separable" within the context of Claim 25. The movable contact bridge 13 is separable from the contact points 16,17 of the respective fixed contacts 14,15 of Krasser et al. Hence, if the Examiner selects either: (1) movable contact bridge 13 and fixed contact point 16; or (2) movable contact bridge 13 and fixed contact point 17 as being the recited separable contacts of Claim 25, then, in either case, Krasser et al. does not teach or suggest a first terminal electrically interconnected with a movable one of separable contacts and a second terminal electrically connected to a fixed one of such separable contacts.

The Examiner states that Yu (Figure 1) discloses a bimetal assembly having a pair of legs wherein one of which is connected to a terminal and the other of which "is connected to a contact support".

It is submitted that Yu, which discloses one bimetal leg connected to a terminal plate 25 and another bimetal leg connected to a first end of a conduct plate 60 functioning as an operating mechanism, adds nothing to Krasser et al. regarding any electrically conductive support mechanism mounted in a housing *and supporting an operating* mechanism, with a first leg of a bimetal engaging and being electrically connected to such support mechanism, with such operating mechanism carrying and being electrically connected to a movable one of separable contacts, and with such *support mechanism* being *electrically connected to* such *operating* mechanism.

The Examiner's statement that Ellenberger discloses a push-button actuator having a contact arm 16 carried by and electrically connected to an operating mechanism (Figure 2) has been traversed, above.

The Examiner has not specified what structure of Ellenberger is an operating mechanism. To the extent that the Examiner argues that the movable contact bridge 14 of Ellenberger is an operating mechanism, then that movable contact bridge 14 carries and is electrically connected to the movable contacts 13. However, it is respectfully submitted that the Examiner must then concede that Ellenberger, which mounts the contact bridge 14 within

the insulating contact-bridge carrier 15,16, and which connects such insulating contact-bridge carrier to control rod 21, does not teach or suggest any electrically conductive support mechanism *being electrically connected to* such contact bridge 14. Alternatively, to the extent that the Examiner argues that some other structure (*e.g.*, the insulating contact-bridge carrier 15,16 like the insulated contact bridge support 20 of Krasser et al.) of Ellenberger is an operating mechanism, then that other structure and the reference does not teach or suggest and adds nothing to the other references regarding an operating mechanism carrying *and being electrically connected* to a separable contact, and an electrically conductive *support mechanism* being *electrically connected to* such *operating* mechanism. Again, as was respectfully discussed above, the Examiner's position that the insulating contact-bridge carrier 15,16 is electrically connected to an operating mechanism cannot be supported by the express disclosure of the reference to the contrary.

Therefore, for the above reasons, it is submitted that Claim 25 patentably distinguishes over the references.

Reconsideration and early allowance are requested.

Respectfully submitted,



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